

What is claimed is:

1. A storage control device storing data sent from a host processor connected to communicate therewith, said  
5 storage control device comprising:

means for storing a plurality of response times respectively corresponding to each of a plurality of storage devices, wherein data sent from said host processor is stored in one of said storage devices, and said response  
10 time of a storage device is a time required from when an input/output request from said host processor is received until when a processing result of said request is sent to said host processor;

means for respectively storing one or a plurality of  
15 response-time upper limit values assigned respectively to one or a plurality of files to be stored in said storage devices; and

means for comparing said upper limit value of a file to be stored with each of said response times of each said  
20 storage devices, and for determining a storage device from said plurality of storage devices for storing said file according to a result of said comparison.

2. A storage control device according to claim 1,  
25 wherein said means for determining a storage device is means for determining a storage device of which said response time is equal to or less than said upper limit value of said file to be stored.

30 3. A storage control device according to claim 1,

wherein:

said storage control device stores one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively comprising a plurality of files, or one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively comprising a plurality of directories, or one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively including at least one file and at least one directory; and

said storage control device comprises means for comparing said upper limit value of one of said groups to be stored with each of said response times of each said storage devices, and for determining a storage device from said plurality of storage devices for storing said group according to a result of said comparison.

4. A storage control device according to claim 2, wherein:

said storage control device stores one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively comprising a plurality of files, or one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively comprising a plurality of directories, or one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively including at least one file and at least one directory; and

said storage control device comprises means for comparing said upper limit value of one of said groups to be stored with each of said response times of each said storage devices, and for determining a storage device from  
5 said plurality of storage devices for storing said group according to a result of said comparison.

5. A storage control device according to claim 1, wherein:

10 in case a plurality of host processors are connected to said storage control device, said storage control device stores response-time upper limit values assigned respectively to each of said files respectively for each of said plurality of host processors; and

15 said storage control device comprises means which makes said means for determining a storage device function respectively for each of said plurality of host processors.

6. A storage control device according to claim 1, wherein said storage control device uses an average disk service rate (ADSR) or a throughput instead of said  
20 response time.

7. A storage control device storing data sent from  
25 a host processor connected to communicate therewith, said storage control device comprising:

means for storing a plurality of response times respectively corresponding to each of a plurality of storage devices, wherein data sent from said host processor  
30 is stored in one of said storage devices, and said response

time of a storage device is a time required from when an input/output request from said host processor is received until when a processing result of said request is sent to said host processor;

5 means for respectively storing one or a plurality of response-time upper limit values assigned respectively to one or a plurality of directories to be stored in said storage devices; and

means for comparing said upper limit value of a  
10 directory to be stored with each of said response times of each said storage devices, and for determining a storage device from said plurality of storage devices for storing said directory according to a result of said comparison.

15 8. A storage control device according to claim 7, wherein said means for determining a storage device is means for determining a storage device of which said response time is equal to or less than said upper limit value of said directory to be stored.

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9. A storage control device according to claim 7, wherein:

said storage control device stores one or a plurality of response-time upper limit values assigned respectively  
25 to one or a plurality of groups respectively comprising a plurality of files, or one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively comprising a plurality of directories, or one or a plurality of response-time  
30 upper limit values assigned respectively to one or a

plurality of groups respectively including at least one file and at least one directory; and

said storage control device comprises means for comparing said upper limit value of one of said groups to  
5 be stored with each of said response times of each said storage devices, and for determining a storage device from said plurality of storage devices for storing said group according to a result of said comparison.

10 10. A storage control device according to claim 8, wherein:

said storage control device stores one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively comprising  
15 a plurality of files, or one or a plurality of response-time upper limit values assigned respectively to one or a plurality of groups respectively comprising a plurality of directories, or one or a plurality of response-time upper limit values assigned respectively to one or a  
20 plurality of groups respectively including at least one file and at least one directory; and

said storage control device comprises means for comparing said upper limit value of one of said groups to be stored with each of said response times of each said  
25 storage devices, and for determining a storage device from said plurality of storage devices for storing said group according to a result of said comparison.

11. A storage control device according to claim 7,  
30 wherein:

in case a plurality of host processors are connected to said storage control device, said storage control device stores response-time upper limit values assigned respectively to each of said directories respectively for  
5 each of said plurality of host processors; and

said storage control device comprises means which makes said means for determining a storage device function respectively for each of said plurality of host processors.

10 12. A storage control device according to claim 7, wherein said storage control device uses an average disk service rate (ADSR) or a throughput instead of said response time.

15 13. A storage control device storing data sent from a host processor connected to communicate therewith, said storage control device comprising:

means for storing a plurality of response times respectively corresponding to each of a plurality of  
20 storage devices, wherein data sent from said host processor is stored in one of said storage devices, and said response time of a storage device is a time required from when an input/output request from said host processor is received until when a processing result of said request is sent to  
25 said host processor;

means for respectively storing one or a plurality of response-time upper limit values assigned respectively to one or a plurality of files to be stored in said storage devices; and

30 means which, in case there is an input/output request

from said host processor in view of one of said files, compares said upper limit value of said file with each of said response times of each said storage devices, and determines a processing priority for said input/output request according to a result of said comparison.

14. A storage control device according to claim 13, wherein:

in case a plurality of host processors are connected to said storage control device, said storage control device stores response-time upper limit values assigned respectively to each of said files respectively for each of said plurality of host processors; and

said storage control device comprises means which, in case there is an input/output request from said host processor in view of one of said files, compares said upper limit value of said file with each of said response times of each said storage devices respectively for each of said plurality of host processors, and determines a processing priority for said input/output request according to a result of said comparison respectively for each of said plurality of host processors.

15. A storage control device according to claim 13, wherein said storage control device uses an average disk service rate (ADSR) or a throughput instead of said response time.